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(54) **METHOD AND SYSTEM WITH TWO CURVES FOR GUIDING A CABLE TIE**

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CPC ***H02G 1/06*** (2013.01); ***F16L 3/233*** (2013.01)

(57) **ABSTRACT**

A guide system to enable installation of a cable tie on a supporting element by passing the cable tie through a first passage to traverse the supporting element, then through a second passage to come back to the same side of the supporting element, enabling the cable tie to surround one or more cables. The guide device includes a gutter with a guide surface with two curves, a first longitudinal curve enabling the surface to extend from a passage to the other passage and a second transverse curve forming a partial envelope for receiving the cable tie and guiding and holding the cable tie in the gutter. The device also has at least one protrusion with a wedging surface projecting from the surface of the gutter to come into contact with and wedge against the supporting element to lock the gutter in position in relation to the supporting element.

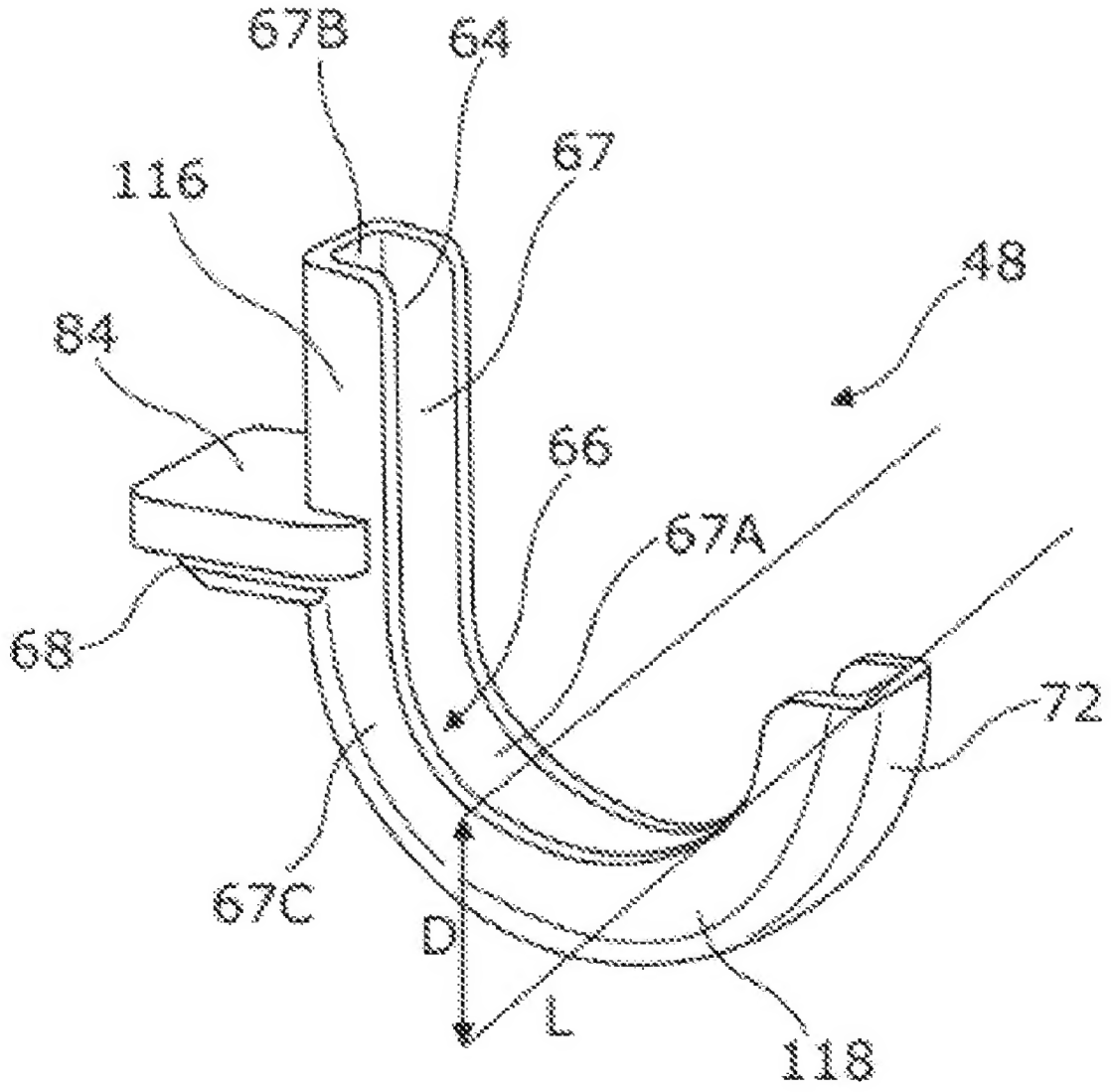


Fig. 1

PRIOR ART

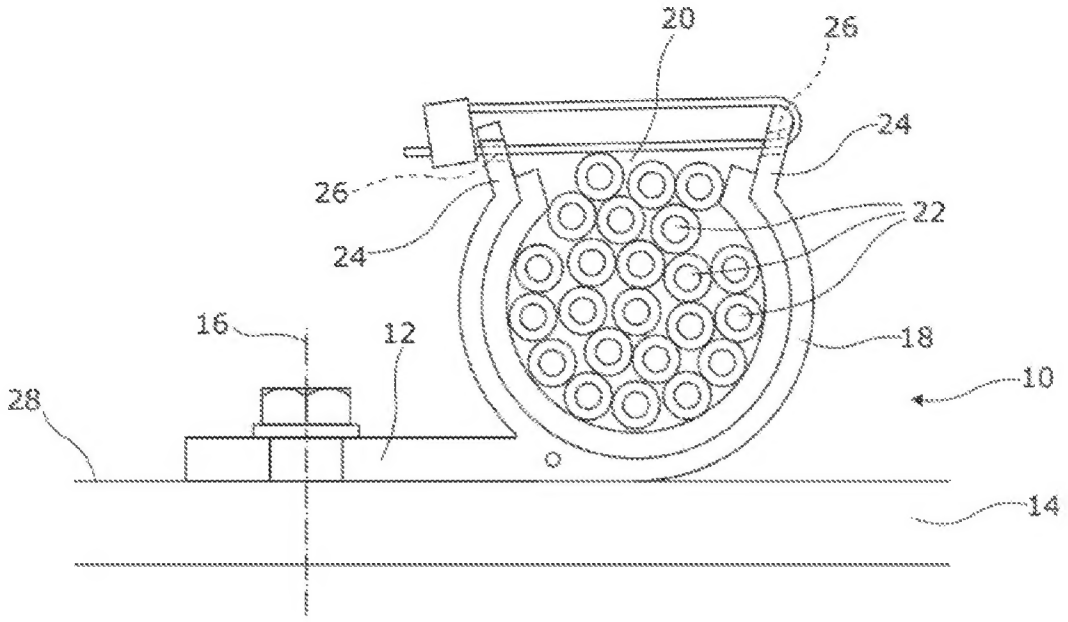


Fig. 2

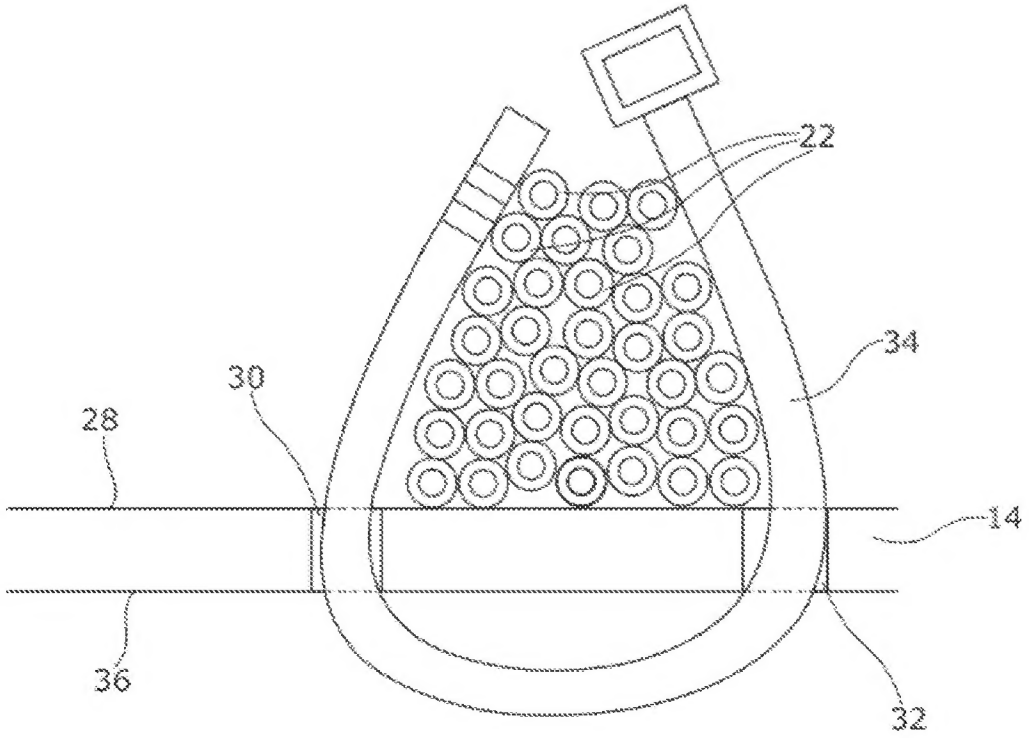


Fig. 3

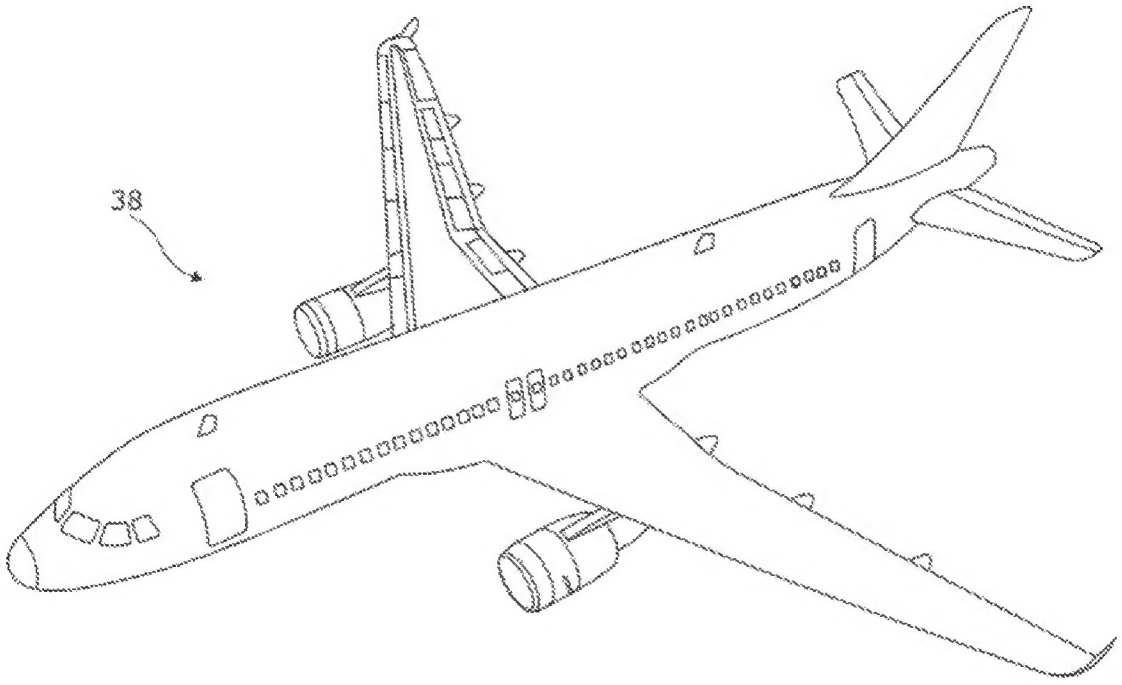


Fig. 4

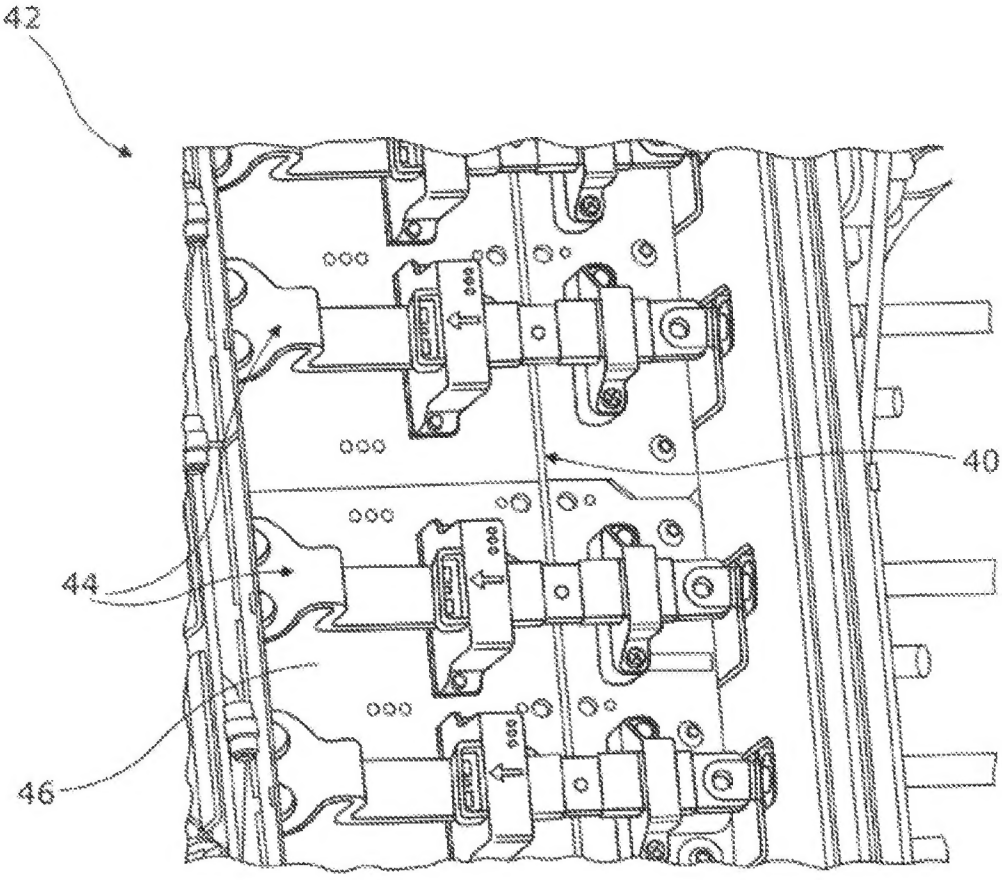


Fig. 5

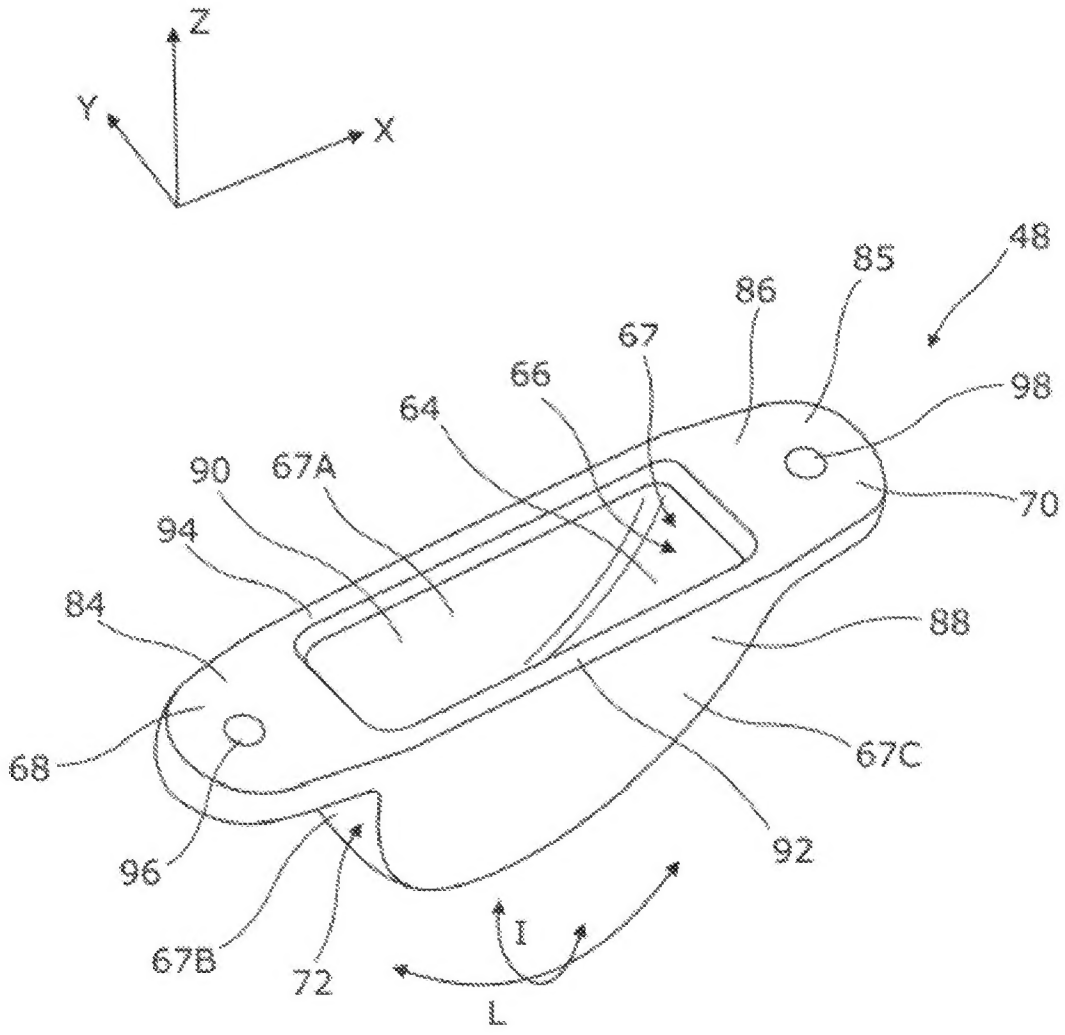


Fig. 6

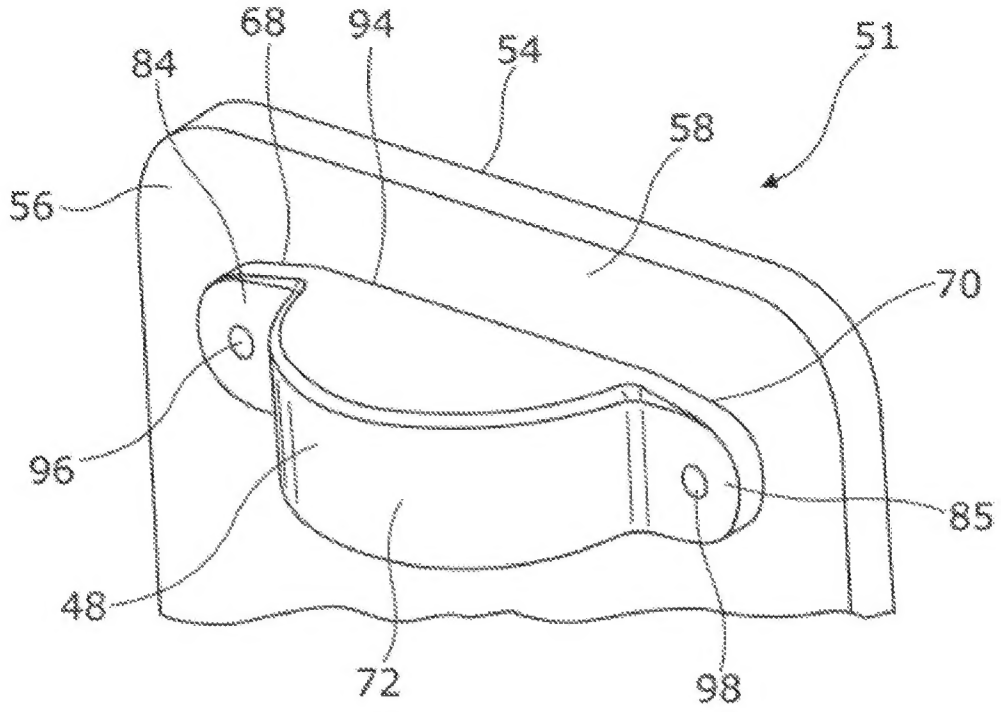


Fig. 7

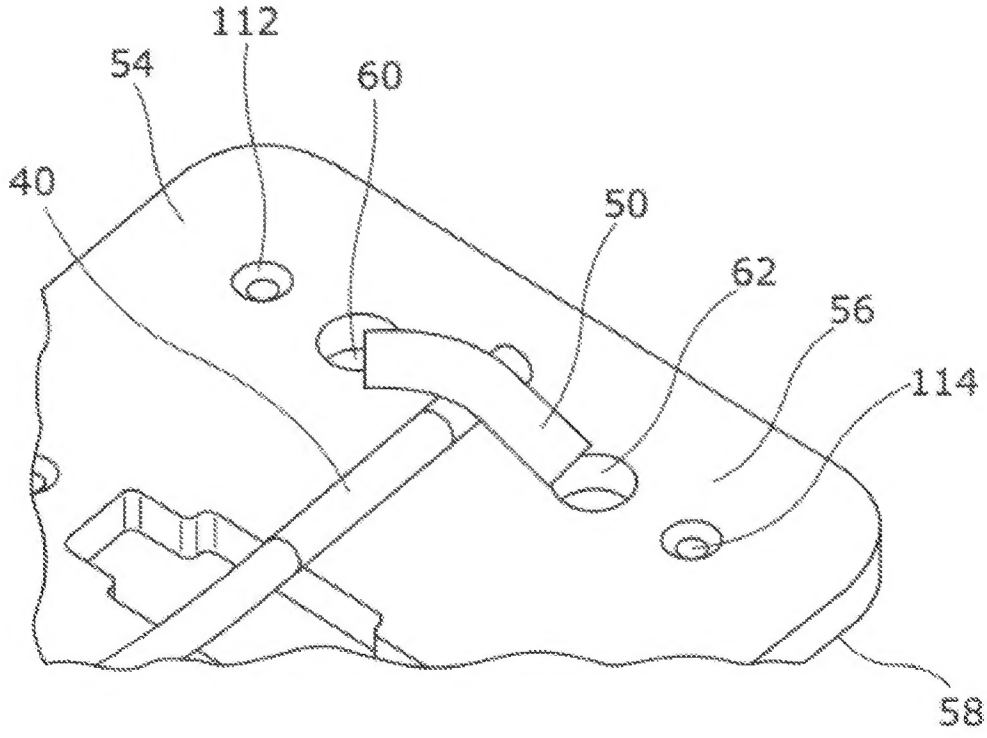
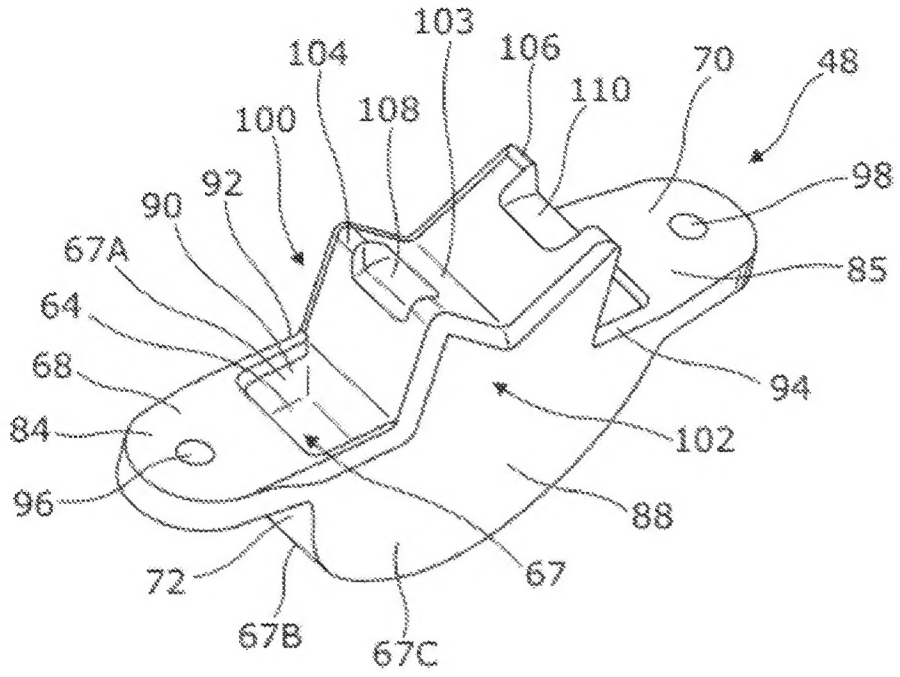


Fig. 8


103
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67B
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Fig. 9

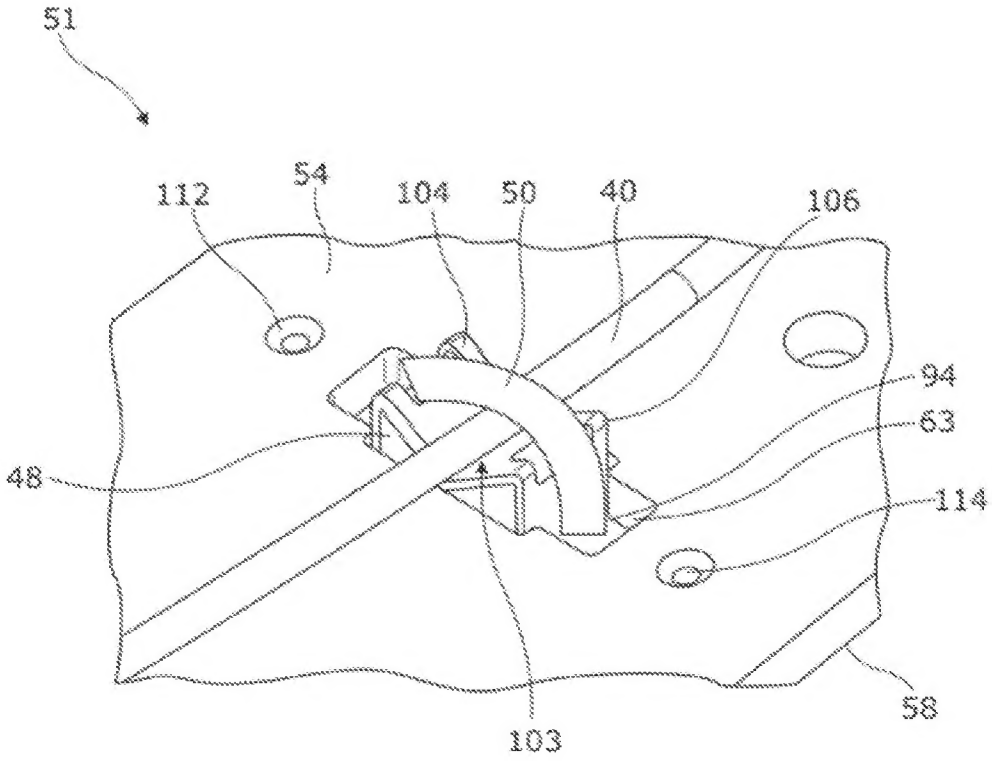
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Fig. 10

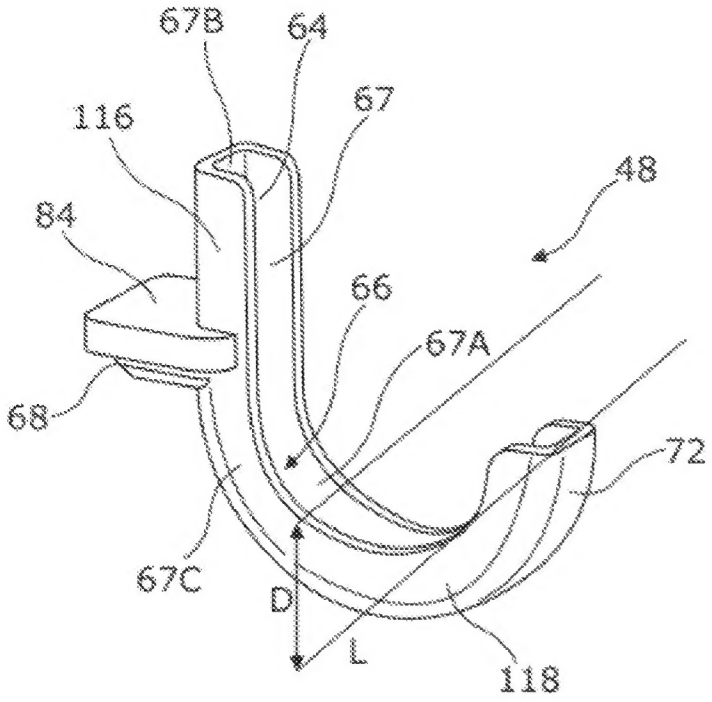
67B
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Fig. 11

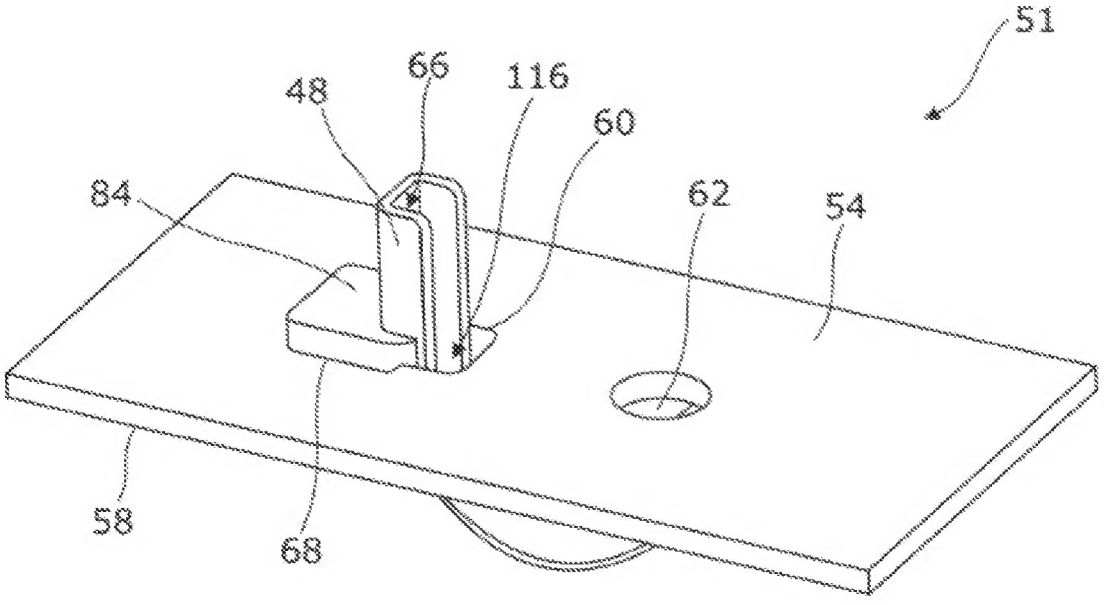
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Fig. 12

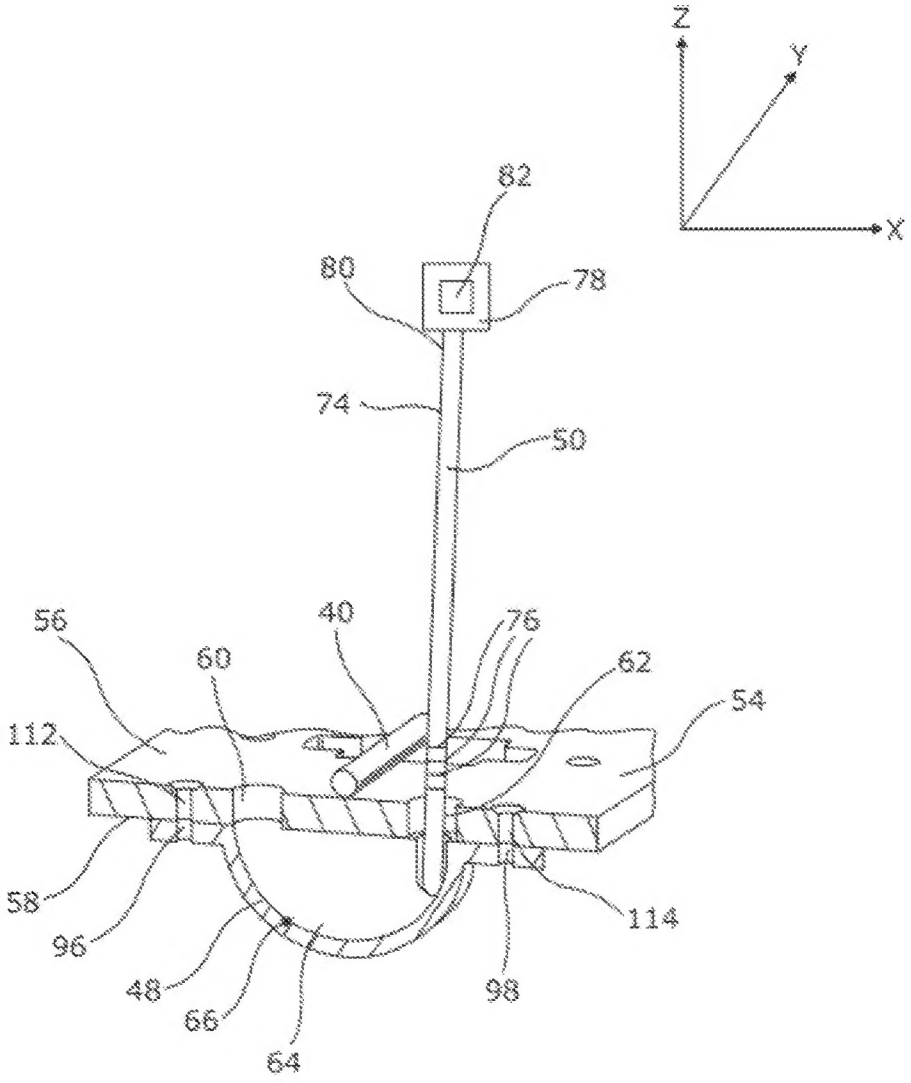


Fig. 13

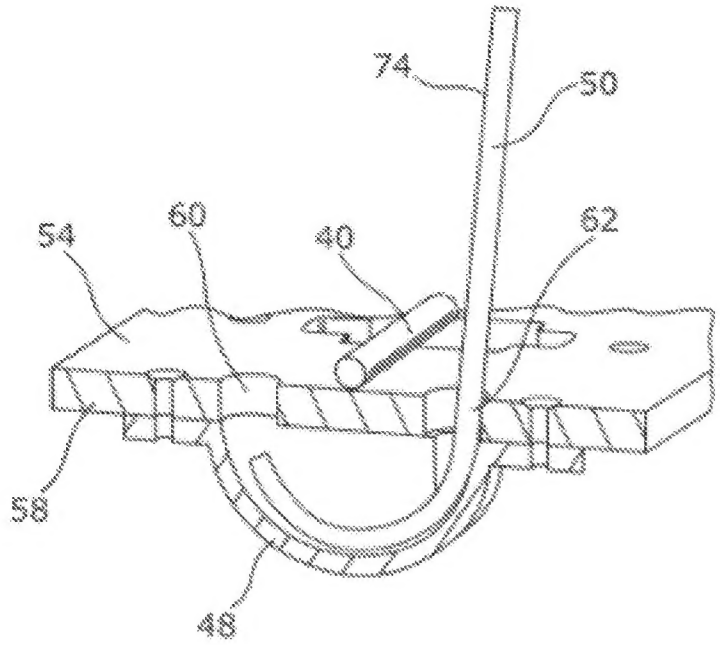


Fig. 14

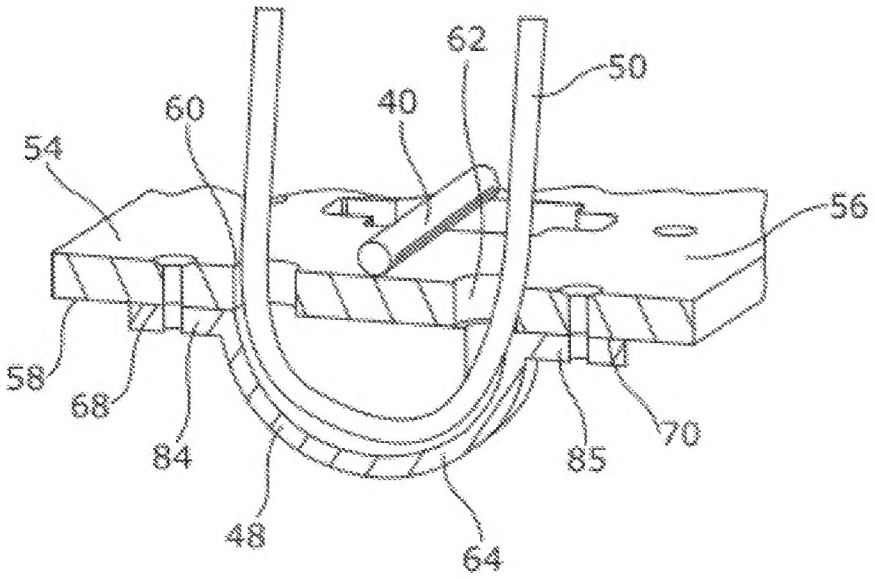


Fig. 15

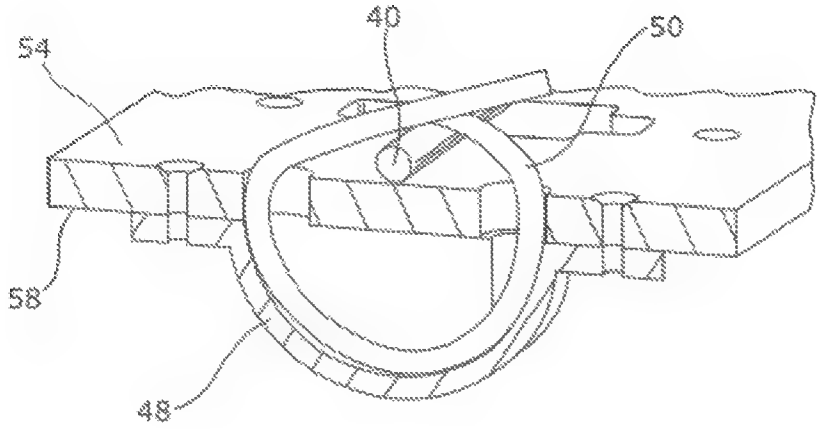


Fig. 16

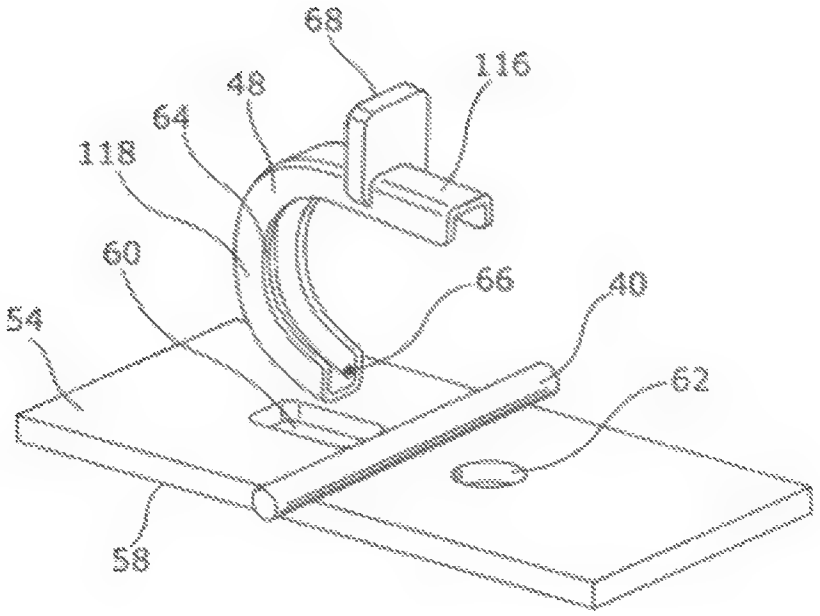


Fig. 17

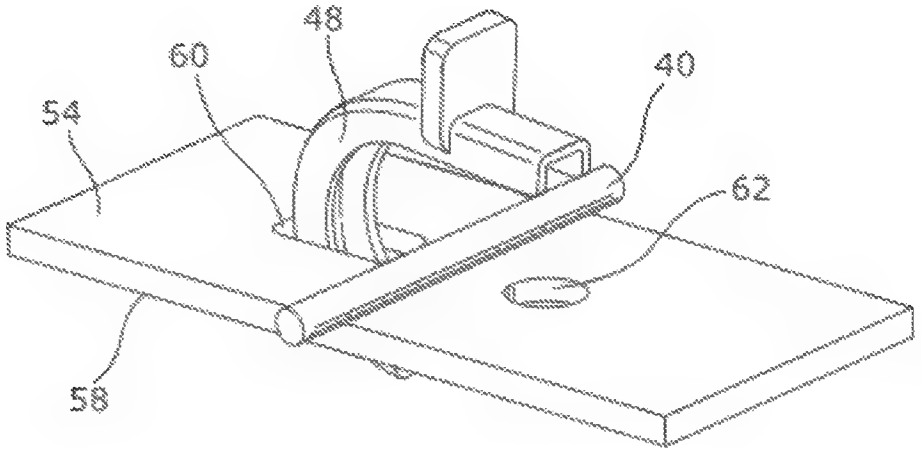


Fig. 18

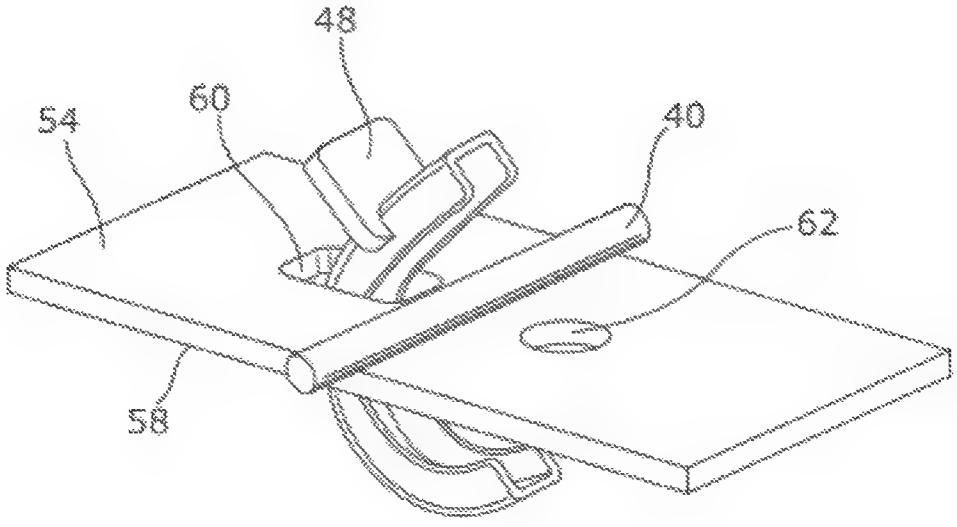


Fig. 19

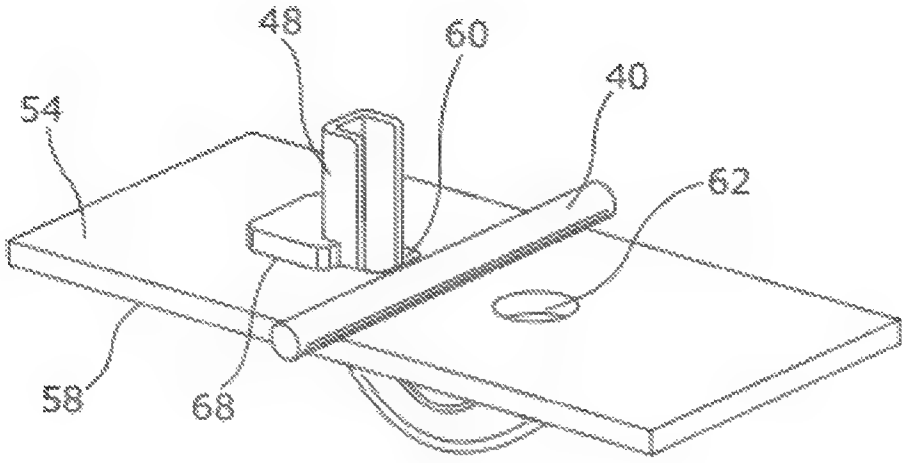


Fig. 20

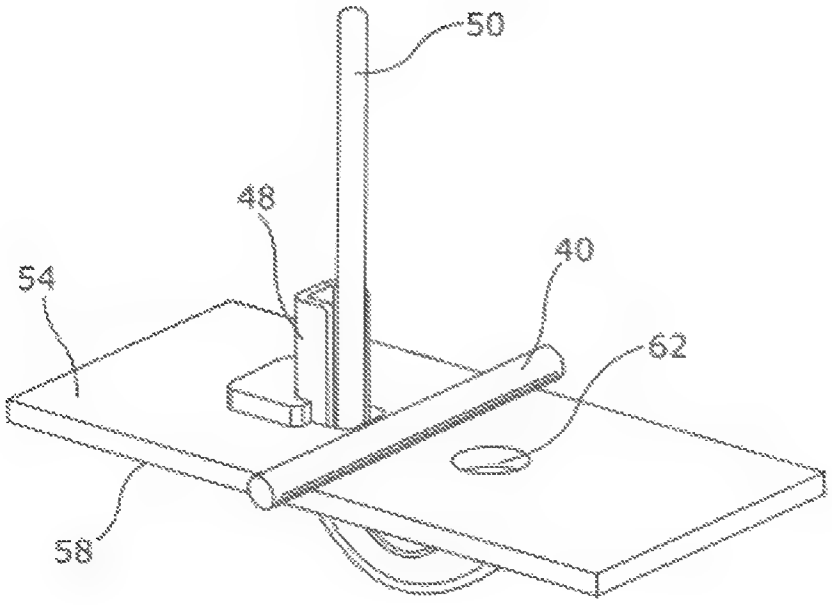
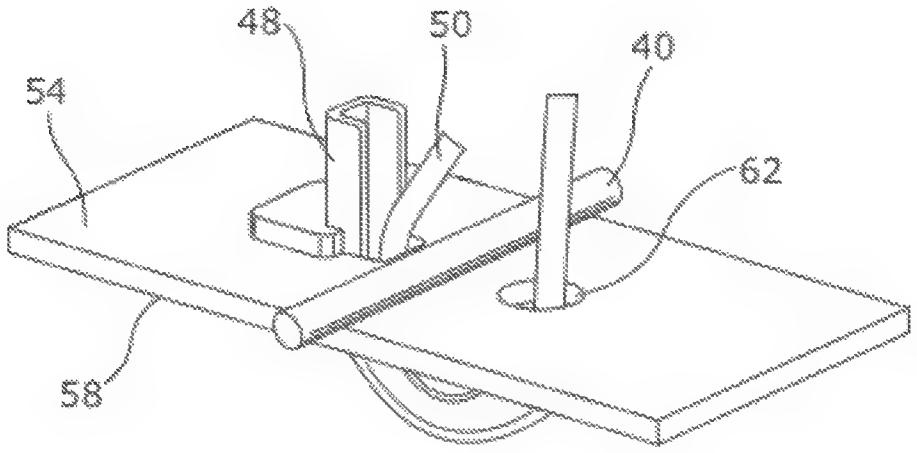


Fig. 21



METHOD AND SYSTEM WITH TWO CURVES FOR GUIDING A CABLE TIE

TECHNICAL FIELD

[0001] The disclosure herein relates to the installation of a cable tie for holding cables, and specifically electrical cables, in position in relation to a given structure. More specifically, the invention proposes a method and a guide device of the cable tie to facilitate installation thereof.

BACKGROUND

[0002] In an aircraft, numerous electrical cables run inside the structure of the aircraft, often in bundles, and have to be held using fastening devices such as cable ties, which are in turn fastened to equipment of the aircraft or to the actual structure of the aircraft, such as frames of the fuselage. The cable ties are intended to hold the cables in relation to this equipment or these structural elements. French patent FR2965670, filed by Airbus Operations SAS, discloses such a fastening device. According to FIG. **1**, which reproduces FIG. **1** from this patent with minor modifications, which are intended to improve the clarity of the description provided below, the fastening device has a first portion **12** pressed against a supporting element **14** using linkage **16** and a second C-shaped portion **18** with an opening **20** enabling insertion of the cables **22**. The ends of the branches of the C have legs **24** with slots **26**. The cables are inserted into the C shape and held using a cable grip that passes through the two slots and pushes the two legs **24** together such as to clamp the cables **22**.

[0003] To minimize the volume of electrical installations, as shown in FIG. **2**, it is beneficial to keep the cables **22** as close as possible to the supporting element **14**, and in particular against one of the faces **28** thereof, referred to as the front face. One solution involves perforating the supporting element **14** with two orifices **30**, **32** on each side of the cables **22** and holding the cables with a cable tie **34**, referred to here as a cable grip, passing through the two orifices to surround and fasten the cable or cables against the front surface **28** of the supporting element. In this case, the cable tie passes through one of the orifices, referred to as the first orifice **30**, on the other side of the supporting element, from the side of the rear face **36** and passes back from the side of the front face **28** through the other orifice, referred to as the second orifice **32**. The cable tie **34**, which is for example self-locking, is then closed to hold the cable or cables against the front face. However, when implementing this solution, it may not be possible to access the rear face **36** of the supporting element, thereby preventing the cable tie **34** from passing back through the second orifice **32**, or making such an operation very complicated.

SUMMARY

[0004] The disclosure herein is intended to propose a guide device for a cable tie enabling the cable tie to be passed back without having access to the rear of the supporting element, and the ability to implement the described solution regardless of environment.

[0005] For this purpose, the disclosure herein relates to a guide system for a cable tie including a guide device for the cable tie and a supporting element to which the device is applied, the guide device being designed to hold at least one cable on a front face of the supporting element that is oriented towards the cable or cables, the opposite face of the supporting element being referred to as the rear face, the cable tie being designed to traverse the supporting element from the front face to the rear face through a first passage, then again from the rear face to the front face through a second passage to surround the cable or cables, in which the two passages can be separate or a single passage, the guide device comprising a gutter with a guide surface with two curves, a first longitudinal curve enabling the surface to extend from one of the passages to the other passage and a second transverse curve forming a partial envelope for receiving the cable tie and guiding and holding the cable tie in the gutter, the device also having at least one protrusion with a wedging surface projecting from the surface of the gutter that is designed to come into contact with and wedge against the supporting element to lock the gutter in position in relation to the supporting element.

[0006] The device guides the cable tie along the gutter during installation from the first orifice to reach and traverse the second orifice, so as to return to the front face of the supporting element and enable closure thereof. The first curve enables the device to extend between the two orifices to guide the cable tie from one orifice to the other orifice, and the second curve prevents the cable tie from coming out of the gutter when moving towards the second orifice.

[0007] The disclosure herein incorporates at least one of the following optional features, taken individually or in combination.

[0008] The gutter is enveloping, the side walls extending such that, when the device is positioned against the rear face of the supporting element, the free ends of the side walls of the gutter come into contact with the rear face of the supporting element to form a cover.

[0009] Where the two passages form a single passage, the side walls of the gutter have a portion where the walls meet transversely to form a bridge.

[0010] The bridge projects from the plane X,Y of the wedging surface or surfaces of at least one protrusion such that, when the device is installed against the rear face of the supporting element, the bridge is inserted into the passage to project beyond the front face thereof.

[0011] The bridge has a surface forming a longitudinal cavity, the bottom of which is designed to receive the cable or cables transversely, and the free longitudinal ends of which are designed to bear the cable tie such that the cable tie passes above the cable or cables.

[0012] The longitudinal free ends of the cavity have a transverse hollow shape.

[0013] The guide system has two protrusions arranged at the two longitudinal ends of the gutter.

[0014] The gutter has side walls of equal and identical height over at least one portion of the length of the gutter and a single wedging surface.

[0015] The gutter has a straight elongate portion designed to protrude on both sides of the supporting element once the device has been installed on the supporting element, the wedging surface being on the side of the front face of the supporting element when the device is in use.

[0016] The disclosure herein also relates to a guide method for a cable tie that involves using the guide system having one or more of the aforementioned features and including the following steps: positioning the wedging surface or surfaces against one of the faces of the supporting element, and guiding the cable tie along the inner surface of

the gutter of the guide device, the longitudinal curve enabling the cable tie to traverse the two passages successively and the transverse curve enabling the cable tie to be held transversely inside the gutter while moving.

[0017] The disclosure herein includes at least one of the following optional features, taken individually or in combination.

[0018] The method includes a step of removing the gutter once the cable tie has traversed the second passage.

[0019] The method includes a step of fastening the wedging surface or surfaces to the supporting element.

BRIEF DESCRIPTION OF DRAWINGS

[0020] Other features and advantages are set out in the description of the disclosure herein below, given purely by way of example and with reference to the attached drawings, in which:

[0021] FIG. **1** is a simplified schematic side cross-section view of a cable fastening device according to the prior art;

[0022] FIG. **2** is a simplified schematic lateral cross-section view of a cable fastening device according to the prior art that is different from the device shown in FIG. **1**;

[0023] FIG. **3** is a perspective view of an aircraft in which a fastening device according to the disclosure herein can be used;

[0024] FIG. **4** is a schematic perspective view of equipment in which a fastening device according to the disclosure herein can be used;

[0025] FIG. **5** is a schematic perspective view of a guide device according to a first embodiment of a first implementation;

[0026] FIG. **6** is a partial schematic perspective bottom view of a supporting element associated with the device in FIG. **5** to enable a cable tie to traverse two passages in the supporting element to surround a cable;

[0027] FIG. **7** is a partial schematic perspective top view of the supporting element in FIG. **6** associated with the device in FIG. **5**;

[0028] FIG. **8** is a schematic perspective view of a guide device according to a second embodiment of a first implementation;

[0029] FIG. **9** is a partial schematic perspective top view of a supporting element associated with the device in FIG. **8**;

[0030] FIG. **10** is a schematic perspective view of a guide device according to a second implementation;

[0031] FIG. **11** is a schematic perspective top view of a supporting element associated with the device in FIG. **10**;

[0032] FIG. **12** is a partial schematic perspective cross-section view taken along a plane parallel to the plane X-Z in a side view of a supporting element associated with the device in FIGS. **5** to **7** representing a usage step of the device;

[0033] FIG. **13** is a view identical to the view in FIG. **12** showing a usage step of the device that follows the step shown in FIG. **12**;

[0034] FIG. **14** is a view identical to the view in FIG. **12** showing a usage step of the device that follows the step shown in FIG. **13**;

[0035] FIG. **15** is a view identical to the view in FIG. **12** showing a usage step of the device that follows the step shown in FIG. **14**;

[0036] FIG. **16** is a schematic perspective view from a specific top-view angle of a supporting element associated with the device in FIGS. **10** and **11** representing a usage step of the device;

[0037] FIG. **17** is a perspective view identical to the view in FIG. **16** showing a usage step of the device that follows the step shown in FIG. **16**;

[0038] FIG. **18** is a perspective view identical to the view in FIG. **16** showing a usage step of the device that follows the step shown in FIG. **17**;

[0039] FIG. **19** is a perspective view identical to the view in FIG. **16** showing a usage step of the device that follows the step shown in FIG. **18**;

[0040] FIG. **20** is a perspective view identical to the view in FIG. **16** showing a usage step of the device that follows the step shown in FIG. **19**; and

[0041] FIG. **21** is a perspective view identical to the view in FIG. **16** showing a usage step of the device that follows the step shown in FIG. **20**.

DETAILED DESCRIPTION

[0042] As shown in FIGS. **3** and **4**, in an aircraft **38** and in a vehicle such as a train, a ship or the like, a building, equipment or any other environment in which one or more cables **40** are laid, the cables must be held in position. In the example of electrical equipment **42** in an aircraft **38**, the cables **40** are routed in bundles. The cables may be close to sets **44** of bus bars, but should preferably not be too close. The cables **40** or sometimes install at the bottom **46** of boxes with no rear access. This is one of many examples in which the rear of the supporting element as described at the beginning of the present description, in this case the box, is very difficult or impossible to access without a lengthy and complex disassembly operation.

[0043] As shown in FIGS. **5** through **21**, the subject matter herein discloses a guide device **48** for a cable tie **50** that is designed to hold at least one cable **40** on a front face **54** of a supporting element **56**, surrounding the cable or cables. In the illustrated implementation, just one cable is shown for the sake of simplicity. The guide system **51** (reference sign shown in FIGS. **6**, **9** and **11**) refers to the device **48** and to the supporting element **56** to which the device is applied. The cable tie **50** traverses the supporting element **56** from the front face **54** to the rear face **58** through a first through-passage **60**, then again from the rear face **58** to the front face **54** through a second through-passage **62** to surround the cable or cables **40**. The guide device **48** has an elongate gutter **64**, the longitudinal direction being the lengthwise direction of the gutter. The longitudinal direction is approximately the direction adopted by the cable tie **50** once positioned in the gutter. Transverse direction means a direction perpendicular to the longitudinal direction. The transverse direction is approximately the direction of the cable or cables **40** held by the cable tie **50**. These directions are indicating using the reference frame in FIG. **5**: the axis X represents the longitudinal direction, the axis Y represents the transverse direction, and the axis Z represents the height or the direction perpendicular to the plane X,Y, which in the illustrated example is a plane parallel to the supporting element **56** and more specifically to the front surface **54** and rear surface **58** thereof. In the supporting element, the passages **60** and **62** are on each side in a longitudinal plane of the cable or cables **40**. The front face **54** is the face

oriented towards the cable or cables **40**. The rear face **58** is the face of the supporting element opposite the front face **54** in the direction Z.

[0044] The gutter **64** has at least one portion **67** with a longitudinal and transverse internal guide surface **66**, the longitudinal guide being provided by a longitudinal shape enabling the gutter to turn back on itself longitudinally to enable the gutter to run from one passage **60** to the other passage **62** of the supporting element, and the transverse guide being provided by a hollow transverse section forming a transverse guide cavity. In the illustrated implementation, the surface **66** has at least one portion forming a curve in a longitudinal plane X-Z (represented by a double arrow L in FIG. **6**). In a transverse plane Y-Z, the gutter **64** has at least one portion with a U-shaped section (represented by a double arrow I in FIG. **6**). The U shape forms a partial hollow envelope. The cable tie **50** is guided when moving at the bottom of this envelope to receive the cable tie **50** and to guide and hold the cable tie in the gutter **64**. The term "inner" in the expression "inner surface of the gutter" refers to the surface on which the cable tie **50** is guided. Each side **67**A, **67**B, **67**C of the portion **67** is a flat surface. The sides **67**A and **67**B as well as **67**B and **67**C are linked by curves and not angles. Any other shape maybe used for the surface **66**, such as a V shape, for example to provide a guide cavity. In another example, the U-shaped section can also be formed of sides with curved surfaces instead of flat surfaces.

[0045] The guide device **48** also has at least one wedging surface **68**, **70** projecting from the outer surface **72** of the gutter, that is shaped to come into contact with and wedge against the supporting element **56**, and more specifically the surface **54** or **58** thereof, depending on the embodiment. The word "outer" in the expression "outer surface" refers to the surface opposite the inner surface **66**. According to a possible implementation, the wedging surface **68**, **70** is one of the surfaces of a protrusion **84**, **85** attached to or integral with the gutter. In the illustrated implementation, the surface **68**, **70** is flat such as to mate with a flat surface (**54** or **58**) of the supporting element **56** and to prevent the guide device from moving, as shown in FIGS. **6**, **11**, **12** and **21**.

[0046] Once the cable tie **50** has been installed, the cable or cables **40** are surrounded by the cable tie **50**, which is deformed by tightening to reduce the passage window for the cable or cables **40**. According to one implementation, the material of the cable tie **50** is elastic such as to return to an initial shape when the cable tie **50** is loosened. According to another implementation, the material is not elastic but only deformable, for example if the cable tie **50** is a single-use cable tie. In a known manner, a cable tie **50**, also referred to as a tie wrap, has a flat elongate body **74** with a plurality of notches **76** on least one face that are arranged in a direction perpendicular to the longitudinal direction of the body, and a head **78**, shown only in FIG. **12** for the sake of simplicity, located at a first end **80** of the body **74**, that has an orifice **82** in the form of a slot with a lug designed to cooperate with one of the notches **76** of the body **74** such as to immobilize the body **74** in relation to the head **78**. Other implementations are possible in which a portion of the body is a rack gear designed to be locked by an appropriate system provided in the head. The device in the illustrated implementation is a Serflex clamping device **50** (registered trademark). The cable tie **50** is self-locking, i.e. once the body has been pulled, the cable tie remains locked in position or in a nearby position.

[0047] The surface condition of the inner surface **66** of the gutter is preferably free of friction elements. In the illustrated implementation, the surface **66** is smooth. The surface may also be made of a material providing such a surface condition or have a coating providing such a surface condition. The width of the side **67**B is determined to ensure satisfactory guidance of the cable or cables.

[0048] According to a first implementation shown in FIGS. **6** to **9** and **12** to **15**, the guide device **48** is fastened to the supporting element **56** and remains in position during use, for example on account of being inaccessible once the supporting element has been assembled. In the illustrated implementation, the gutter **64** is enveloping, the side walls **88**, **90** of the gutter **64** extending such that when the device is positioned against the rear face **58** of the supporting element, the free ends **92**, **94** of the walls **88**, **90** come into contact with the rear face **58** of the supporting element to form a closed cover with the surface of the rear face **58** of the supporting element. In the illustrated example, the entirety of the free end **92**, **94** of the gutter **64** is contained within a plane. Therefore, when applied to the supporting element, the device **48** forming a cover with the supporting element leaves no passage to the outside of the gutter, since all of the covering walls are unbroken. In the illustrated implementation, the gutter has a semi-cylindrical shape. In a possible example, the section in a central plane of symmetry of the gutter (parallel to the plane X,Z) parallel to the side walls **88**, **90** thereof is semi-circular and in a plane perpendicular thereto, a plane parallel to the plane X,Y of rectangular section.

[0049] According to the embodiments illustrated in FIGS. **5** through **9**, the device **48** has two wedging surfaces **68**, **70** positioned at the two longitudinally opposite free ends of the gutter. In the illustrated example, the two protrusions **84**, **85** form semi-cylindrical lugs. The wedging surfaces are in the same plane X,Y. In the illustrated implementation, each protrusion **84**, **85** is perforated by a through-orifice **96**, **98** enabling the passage of a fastening system, such as a nut/bolt system, for fastening to the supporting element. Any other system can be used, such as a rivet system.

[0050] In a specific embodiment, referred to as the second embodiment, of the first implementation, as illustrated in FIGS. **8** and **9**, the side walls **88**, **90** of the gutter have a portion **100** where the walls **88**, **90** meet transversely to form a bridge **102** between the side walls, thereby providing a supporting element for the cable or cables where the two passages **60**, **62** of the supporting element form a single passage **63** (shown in FIG. **9**). The bridge **102** projects from the plane X,Y of the surfaces of the protrusions designed to come into contact with the rear face **58** of the supporting element such that, when the device **48** is installed against the face **58** of the supporting element, the bridge **102** is inserted into the passage **63** to project beyond the front face **54** thereof. The bridge **102** has a surface forming a cavity **103**, the bottom of which is designed to receive the cable or cables **40** transversely, and the free longitudinal ends **104**, **106** of which bear the cable tie **50** such that the cable tie passes above the cable or cables. The height of the bridge **102** can be determined to ensure a given distance to the supporting element, for example to move the cable or cables away from the supporting element. According to the illustrated example, the bridge **102** has a V-shaped longitudinal section. The cables are then contained in the V-shaped section and the free ends of the V bear the cable tie **50**. In

the illustrated implementation, the free ends **104**, **106** have a transverse hollow shape **108**, **110** to hold the cable tie at the bottom of the hollow. In the illustrated example, the bottom of the hollow portion **108**, **110** is flat to better hold a flat cable tie.

[0051] According to a second implementation illustrated in FIGS. **10** and **11**, the guide device **48** is not fastened to the supporting element, but installed temporarily to enable the cable tie to be guided through the two passages **60**, **62** before being removed. The device is therefore not fastened to the supporting element and is only used to enable installation of the cable tie **50**. In the illustrated implementation, the device has just one protrusion **84**. The gutter **64** has at least one straight elongate portion **116** extending in the longitudinal direction to enable the gutter to traverse the supporting element through at least one passage **60** and, once wedged, to project beyond the supporting element on each side of the passage perpendicular to the plane of the supporting element. The portion **116** can be curved, but the fact of being straight and perpendicular to the plane X-Y once the device has been installed and wedged facilitates the handling thereof. In this embodiment, the wedging surface **68** of the protrusion **84** is on the side of the front face **54** of the supporting element **56** once the device **48** is in position. In this embodiment, the gutter **64** then has a longitudinal straight portion **116** and a curved portion **118** providing guidance through the passages. In addition to having at least the dimensions specified above, the passage **60** must be larger than the greatest distance D between the transverse line L of the curve of the gutter at the furthest point in the direction Z once installed on the supporting element and the plane parallel to the plane of the protrusion (parallel to the plane X,Y) at the free end of the gutter on the side of the curved portion **118**. As shown in FIG. **18**, this enables the gutter to be inserted through the passage **60**. In this implementation, the height of the sides **67**A and **67**C is identical and equal over approximately the entire length of the gutter. In a specific embodiment, the cross section of the gutter **64** is smaller than the passage **62** such that at least a portion of the gutter can partially enter the passage, or otherwise.

[0052] In the embodiments illustrated in FIGS. **5** through **7**, the installation method for the cable tie includes the following steps, as shown in FIGS. **12** through **15**. The first step shown in FIG. **12** involves fastening the device **48** to the rear face **58** of the supporting element. In the illustrated example, through-holes **112**, **114** are provided in the supporting element **56** positioned such that, when the device **48** is pressed against the supporting element **56**, the holes **112**, **114** and the orifices **96**, **98** are aligned. Screws (not shown) can then be inserted into the orifices **96**, **98** and the corresponding holes **112**, **114** to fasten the device **48** against the supporting element **56**. Any other fastening system can be used, such as rivets. The supporting element **56** can then be installed in an environment such as a fuselage. As mentioned before, in some cases, the rear face **58** of the supporting element is no longer accessible. As shown in FIG. **12**, a cable **40** is drawn and then a cable tie **50** need only be inserted in a passage **62** of the supporting element. As shown in FIG. **13**, the gutter **64** of the device guides the cable tie **50** to the second passage **60**, which enables the cable tie to pass back through the supporting element (see FIG. **14**) to surround the cable **40**. The cable tie (FIG. **15**) is then closed using any means, such as those mentioned above.

[0053] FIGS. **16** through **21** show different usage steps of the device **48** according to the implementation in FIGS. **10** and **11**. Unlike in the previous embodiment, the supporting element **56** can be installed in the related usage environment without having to pre-install the device **48**. In a first step (FIG. **16**), the device **48** is positioned in relation to the supporting element **56** such that the straight portion **116** of the gutter is approximately parallel to the plane of the supporting element **56**. Given the size of the passage **60**, the curved portion **118** of the gutter can then be inserted through the passage **60**, as shown in FIG. **17**. Once the curved portion is on the side of the rear face **58** of the supporting element **56**, the operator can straighten the device **48** (FIG. **18**) until the straight portion **116** is approximately perpendicular to the plane of the supporting element **56** (FIG. **19**). The wedging surface **68** bears against the front face **54** of the supporting element. Once the device is wedged, the gutter links the two passages **60** and **62**. The cable tie **50** is then inserted into the passage **60** (FIG. **20**). The gutter guides the cable tie to the passage **62** to enable the cable tie to traverse the supporting element **56** and to surround the cable **40** (FIG. **21**). Once the cable tie is tightened about the cable, the device **48** can be removed. Only the cable tie **50** is left in place.

[0054] According to one implementation, the guide device is made integrally by molding or 3D printing. Any other production method can be used, for example there may be several parts manufactured separately then fastened together.

[0055] This guide system provides multiple advantages. Removing the device once the cables have been installed or positioning the device behind the equipment reduces the risk of foreign object debris (FOD) caused by a device breaking or being left behind in assembly/maintenance operations and subsequently moving around in the equipment and causing damage. The number of operations required to install the cables is reduced. Since the guide device is designed for several different cable diameters, multiple cable standards are not required.

[0056] While at least one example embodiment of the invention(s) is disclosed herein, it should be understood that modifications, substitutions and alternatives may be apparent to one of ordinary skill in the art and can be made without departing from the scope of this disclosure. This disclosure is intended to cover any adaptations or variations of the example embodiment(s). In addition, in this disclosure, the terms "comprise" or "comprising" do not exclude other elements or steps, the terms "a", "an" or "one" do not exclude a plural number, and the term "or" means either or both. Furthermore, characteristics or steps which have been described may also be used in combination with other characteristics or steps and in any order unless the disclosure or context suggests otherwise. This disclosure hereby incorporates by reference the complete disclosure of any patent or application from which it claims benefit or priority.

1. A guide system for a cable tie including a guide device for the cable tie and a supporting element to which the device is applied, the guide device configured to hold at least one cable on a front face of the supporting element that is oriented towards a cable or cables, an opposite face of the supporting element being a rear face, the cable tie configured to traverse the supporting element from the front face to the rear face through a first passage, then again from the rear face to the front face through a second passage to surround

the cable or cables, in which the two passages can be separate or a single passage, the guide device comprising a gutter with a guide surface with two curves, a first longitudinal curve enabling the surface to extend from one of the passages to another passage and a second transverse curve forming a partial envelope for receiving the cable tie and guiding and holding the cable tie in the gutter, the device also having at least one protrusion with a wedging surface projecting from the surface of the gutter that is configured to come into contact with and wedge against the supporting element to lock the gutter in position in relation to the supporting element.

2. The guide system of claim **1**, wherein the gutter is enveloping, the side walls extending such that, when the device is positioned against the rear face of the supporting element, free ends of the side walls of the gutter come into contact with the rear face of the supporting element to form a cover.

3. The guide system of claim **1**, wherein, where the two passages form a single passage, the side walls of the gutter having a portion where the walls meet transversely to form a bridge.

4. The guide system of claim **3**, wherein the bridge projects from a plane of the wedging surface or surfaces of at least one protrusion such that, when the device is installed against the rear face of the supporting element, the bridge is inserted into the passage to project beyond the front face thereof.

5. The guide system of claim **4**, wherein the bridge has a surface forming a longitudinal cavity, a bottom of which is configured to receive the cable or cables transversely, and free longitudinal ends of which are configured to bear the cable tie such that the cable tie passes above the cable or cables.

6. The guide system of claim **5**, wherein the longitudinal free ends of the cavity have a transverse hollow shape.

7. The guide system of claim **1**, comprising two protrusions at the two longitudinal ends of the gutter.

8. The guide system of claim **1**, wherein the gutter has side walls of equal and identical height over at least one portion of a length of the gutter and a single wedging surface.

9. The guide system of claim **8**, wherein the gutter has a straight elongate portion configured to protrude on both sides of the supporting element once the device has been installed on the supporting element, the wedging surface being on a side of the front face of the supporting element when the device is in use.

10. A guide method for a cable tie for using the guide system of claim **1**, the method comprising:

positioning the wedging surface or surfaces against one of the faces of the supporting element; and

guiding the cable tie along an inner surface of the gutter of the guide device, the longitudinal curve enabling the cable tie to traverse the two passages successively and the transverse curve enabling the cable tie to be held transversely inside the gutter while moving.

11. The guide method of claim **10**, comprising removing the gutter once the cable tie has traversed the second passage.

12. The guide method of claim **10**, comprising fastening the wedging surface or surfaces to the supporting element.

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